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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,528	09/17/2003	Paul Keith Scherrer	71618	4295

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EXAMINER

HOPKINS, ROBERT A

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,528

Applicant(s)

SCHERRER, PAUL KEITH

Examiner

Robert A. Hopkins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 10, 12, 13 and 15-20 is/are allowed.
- 6) ☒ Claim(s) 9, 21-23, 25, 26, 29, 32-34, 38 and 40-44 is/are rejected.
- 7) ☒ Claim(s) 11, 14, 24, 27, 28, 30, 31, 35-37 and 39 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Claim Objections

Claims 11,14,31 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 14 recites "wherein no spine is present, and wherein said vanes are each fixed to at least one interior wall of said elbow". Examiner notes that applicant has amended claim 1 to recite "a central spine to which said vanes are attached". Examiner notes that the limitations of claim 14 are in contrast to the limitations of claim 1, and therefore examiner suggests deleting claim 14. Correction is requested.

Claims 11 and 31 depend on claims 11 and 31 respectfully and therefore are not further dependant on a previous claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 40-44 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. A separator having at least one elbow, and at least one fishbone mounted therein, the fishbone having a plurality of vanes angled longitudinally downwards with respect to gravity which is critical or essential to the

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practice of the invention, but not included in claim 40 is not enabled by the disclosure.

See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Examiner notes page 11 lines 20-22 of the current specification which states "The subject invention separator requires at least one elbow, and at least one fishbone mounted therein, the fishbone having a plurality of vanes angled longitudinally downwards with respect to gravity, ...". Therefore the process of claim 40 is not enabled by the current specification. Claims 41-44 depend on claim 40 and hence are also rejected.

Claims 9,29,41, 42,43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 line 2 and claim 29 line 2 recites "said strut". There is a lack of antecedent basis for "said strut" in previous claim limitations. Correction is requested.

Claim 41 recites "wherein said separator comprises a polymerization reactor". Examiner respectfully submits that no reaction occurs within the separator of claim 40. The separator is for separation of liquid from a liquid entrained gas which is produced upstream from the separator. Correction is requested. Claim 42 depends on claim 41 and hence is also rejected.

Claim 43 recites "the elbow". There is a lack of antecedent basis for "the elbow" in previous claim limitations. Claim 44 depends on claim 43 and hence is also rejected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21,25,32-34,38 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chalfant(851494).

Chalfant teaches a gas liquid inertial separator comprising an enclosed elbow(note enclosure 8) having an internal wall(1), a fishbone separation enhancer comprising a plurality of longitudinally extending vanes positioned across the direction of gas flow and spaced apart along the direction of gas flow, and wherein the vanes are oriented downwards in their longitudinal direction with respect to gravity such that particulate collected from the gas flow through the elbow runs downward to at least one collection site. Chalfant further teaches wherein the vanes have a cross section having a height greater than a thickness, the vanes mounted such that an axis through the height of the cross section is angled from the direction of gas flow by about 20 degrees to about 90 degrees. Chalfant further teaches wherein the elbow has a circular cross section. Chalfant further teaches wherein the elbow has a polygonal cross section. Chalfant further teaches wherein no spine is present and wherein the vanes are each fixed to at least one interior wall of the elbow. Chalfant further teaches a process for separation of droplets of liquid from a gas stream comprising directing the gas stream into a separator of claim 1, collecting liquid by contact of the droplets with the fishbone

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separation enhancer and walls of the elbow, and providing an exit gas stream which is depleted of liquid droplets.

Examiner notes the structure of Chalfant is to a spark arrester , however the apparatus limitations of claim 21 are met by Chalfant, and are fully capable of removing an entrained liquid from a gas.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22,23,26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chalfant(851494) taken together with Mcaferty et al(5882386).

Chalfant teaches all of the limitations of claim 22 but is silent as to wherein the vanes are of hollow construction and have at least one opening along a length thereof. Mcaferty et al teaches a separator for separating liquid droplets from an air flow with an enclosed casing, wherein the vanes(12) are of hollow construction and have at least one opening along a length thereof. It would have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a vane of hollow construction and have at least one opening along a length thereof for the angled vane of Chalfant in order to collect a greater amount of particulate or liquid from the airflow of Chalfant.

McAferly et al further teaches wherein the opening is along the entire length of the vane, the vane positioned such that the opening faces the direction of flow of the gas flowing through the enclosed casing.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over McAferly et al taken together with German reference(3640377).

McAferly et al teaches a process of the separation of droplets of liquid from a flowing gas stream comprising directing the flowing gas stream into a separator containing a plurality of longitudinally extending vanes(12) positioned across the direction of gas flow and spaced apart along the direction of gas flow. McAferly et al is silent as to vanes having fluid collection lips located at the bottom of the vanes and collecting liquid by contacting the droplets with the vanes. German reference teaches a separator for separating entrained solids from a gas flow, wherein the separator includes a plurality of longitudinally extending vanes(6a,6b in figure 7) positioned across the direction of gas flow and spaced apart along the direction of gas flow and vanes having fluid collection lips(23 in figures 5 and 6) located at the bottom of the vanes and collecting particulate by contacting the particulate with the vanes. It would have been obvious to someone of ordinary skill in the art at the time of the invention to provide to vanes having fluid collection lips located at the bottom of the vanes of McAferly et al to provide for a more complete and efficient separation of liquid and to prevent reintrainment of liquid into the gas flow.

Allowable Subject Matter

Claims 1-8,10,12,13,15-20 are allowed.

Claim 1 recites "a central spine to which said vanes are attached".

Chalfant(851494) fails to teach a central spine to which vanes are attached. McAferty et al and German reference fail to teach an elbow and a central spine to which vanes are attached. Claims 2-8 and 10,12,13 depend on claim 1 and hence are also allowed.

Claims 24,27,28,30,35,36,37,39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 24 recites "wherein said vanes are mounted on struts which extend from said spine, or from said elbow". Chalfant fails to teach vanes mounted on struts. The vanes of Chalfant are attached directly to the elbow. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide wherein vanes are mounted on struts which extend from said spine, or from said elbow because Chalfant does not suggest such a modification.

Claims 24 and 27 recites "wherein a spine is present, and said vanes slope downward from said spine". Chalfant fails to teach a spine. The vanes of Chalfant are attached directly to the elbow. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a spine, wherein the vanes slope downward from said spine because Chalfant does not suggest such a modification.

Claim 28 recites "wherein a spine is present, and said vanes slope downward towards said spine". Chalfant fails to teach a spine. The vanes of Chalfant are attached directly to the elbow. It would not have been obvious to someone of ordinary

skill in the art at the time of the invention to provide a spine, wherein the vanes slope downward towards said spine because Chalfant does not suggest such a modification.

Claim 30 recites "wherein a spine is present and said spine is a metal spine having a width of about one half or less of the internal diameter of said elbow".

Chalfant fails to teach a spine. The vanes of Chalfant are attached directly to the elbow. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a spine and said spine is a metal spine having a width of about one half or less of the internal diameter of said elbow because Chalfant does not suggest such a modification.

Claim 35 recites "said separator having a spine, said spine floatingly positioned within said elbow". Chalfant fails to teach a spine. The vanes of Chalfant are attached directly to the elbow. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a spine, said spine floatingly positioned within said elbow because Chalfant does not suggest such a modification.

Claim 36 recites "wherein a spine is present having a bottom end of said spine is located within said elbow by a first retainer fixed to a wall of said elbow". Chalfant fails to teach a spine. The vanes of Chalfant are attached directly to the elbow. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a spine having a bottom end of said spine is located within said elbow by a first retainer fixed to a wall of said elbow because Chalfant does not suggest such a modification. Claims 37 and 39 depend on claim 36 and hence would also be allowable upon incorporation of claim 36 into claim 21.

Response to Arguments

Applicant's arguments filed 5-31-05 have been fully considered but they are not persuasive.

Applicant argues claim 21 recites that the piping elbow is clarified as one being an enclosed elbow having an internal wall, and this stands in contrast to the structure in Chalfant in which the smoke stack walls are lined with slits and are therefore not enclosed.

Examiner notes that claim 21 recites " an enclosed elbow having an internal wall". Examiner respectfully submits that the elbow(1) of Chalfant is clearly enclosed by the structure 8, and the elbow has an internal wall. Therefore, the claim is anticipated by the structure of Chalfant. Furthermore, applicant in the response states "The smoke stack itself is enclosed by a casing. However it is the smoke stack which forms the elbow containing the flow of smoke and the deflector plates". Therefore, applicant uses the same terminology, "enclosed" in the remarks as in the body of claim 21. Examiner notes that the internal wall of the elbow of Chalfant has a slotted structure, and is not solid. Therefore, a possible suggestion for amendment to claim 21 would be – an elbow having a solid internal wall--.

Examiner notes the 112 second paragraph rejection for claim 9 was not addressed in the current response. A similar rejection holds for claim 29 of the new claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

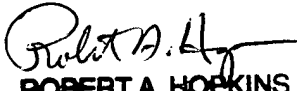
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday, 7am-4pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rah
June 10, 2005


ROBERT A. HOPKINS
PRIMARY EXAMINER
A.U. 1724